suppressed, *i. e.*, there will be emission minima where there are reflection maxima (Aschkinass, Rosenthal). But the radiation from the moon can not be detected except when it is illuminated by the sun. The result is that if the surface is composed of silicates, then the observed energy curve will be the composite of the selectively emitted energy of the moon, and the selectively reflected energy of the sun. The selectively reflected energy of the sun will to a certain extent fill up the minima in the lunar emission curve. Atmospheric absorption will decrease the intensity of the radiation, so that it is almost too much to hope to study the composition of the various parts of the lunar surface by the identification of the selective reflection bands in its energy spectrum.

R. L. FARIS,
Secretary

CLEMSON COLLEGE SCIENCE CLUB

THE regular meeting of the club was held on the evening of January 18, at which time Dr. F. H. H. Calhoun gave an illustrated lecture on 'Geological Changes as Factors in Life Development.' The varying relations between the extent of the land masses and the sea was a powerful factor in the life development. When land rose, restricting the habitat of the life of the sea, the weaker ones were compelled to adapt themselves to a different environment or to perish. Again when there was a sinking of the land, the faunæ of the continents were forced to find some avenue of escape for themselves. The various problems which the succession of changes caused were considered in turn, but the main portion of the address was devoted to the development of the vertebrates, especially that of the reptilian dynasty. It seemed less a coincidence that a great geological change was always accompanied by a variation in the flora and faunæ, than that they held the relation of cause and effect.

S. B. EARLE,
Secretary

THE ELISHA MITCHELL SCIENTIFIC SOCIETY OF THE UNIVERSITY OF NORTH CAROLINA

THE 171st meeting was held in the main lecture room of Chemistry Hall, Tuesday, March 19, 7:30 P.M., with the following program:

Professor J. E. LATTA: 'New Developments in Electric Traction.'

Mr. N. C. CURTIS: 'Architectural Composition.'

ALVIN S. WHEELER,
Recording Secretary

THE ST. LOUIS CHEMICAL SOCIETY

AT the meeting of the St. Louis Chemical Society, on March 11, the president, Dr. H. A. Hunicke, opened the proceedings with a brief but feeling encomium on the illustrious chemists, lately passed away in such close succession—Beilstein, Mendeléef, Menchutkin, Roozeboom, Moissan. The society honored the memory of the great ones by rising. Mr. J. J. Kessler presented a paper entitled 'The Chemistry of Electrical Engineering.' Mr. Carl Hambuechen then presented a paper on the cognate subject 'Electro-Chemistry in the Industries.' The latter paper was profusely illustrated with lantern slides.

C. J. BORGMEYER,
Corresponding Secretary

DISCUSSION AND CORRESPONDENCE

THE FIRST REVISER AND ELIMINATION

IF the present discussion of the rules and regulations governing zoological nomenclature shall result in a greater degree of uniformity among the workers in this field, the space that has been devoted to the subject in the pages of SCIENCE will not have been wasted. Few things have resulted so injuriously to the best interests of natural history as the lack of uniformity in regard to the names employed by different writers, following the radical difference in their methods of procedure.

Even at the present time, however, it appears that certain writers in our midst have not a clear idea of the method of elimination as applied to the settling of the question of the true type species of the earlier genera, apparently laboring under the mistaken impression that it is distinct from, or even opposed to, the first reviser method. As a matter of fact, *it is an integral part of this method.* Thus, the author who first elim-

inated one of the original species from the old genus must be considered as a first reviser, since he thereby restricted the limits of the old genus. In like manner the author that subsequently eliminated one of the species from the restricted genus must also be considered a first reviser, and so on down the line. Where the old genus originally contained only two species, neither of which had been designated its type at the time the first reviser eliminated one of them as the type of a new genus, he thereby caused the remaining species to become, by elimination, the type of the old genus, although he did not so designate it. Elimination, therefore, instead of being in opposition to, is in reality a part of the first reviser method.

The action of the first reviser has been upheld by the botanists as well as by zoologists, and is in perfect accord with the fundamental law of priority. Its very reasonableness has commended it to practically all workers in every department of natural history. On the contrary, the first species rule demands that the action of the first reviser be nullified in all those cases where he had designated any other than the first species as the type of the old genus, or had taken the first species as the type of a new genus; it is, therefore, in direct opposition to the first reviser method plus elimination, and also is in opposition to the law of priority. The futility of attempting to force this unreasonable, non-scientific method upon thoughtful, reasoning workers would appear to be so self-evident as to require no further comment.

D. W. Coquillett

U. S. National Museum,
April 3, 1907

POLISHED PEBBLES

To the Editor of Science: On page 392, in the issue of Science for March 8, 1907, it is stated that wind-polished pebbles from New Jersey are facetted. The wording of the assertion is such as to justify the possible inference that wind-polished pebbles are always facetted. It is doubtless true that in regions where the wind is prevailingly from one quarter, pebbles partially imbedded and held firmly during the polishing process, are usually facetted. On the other hand, where hard unimbedded pebbles and boulderlets lie on the surface of hard rock ledges, fully exposed to strong winds, they become highly polished, but seldom or never show even the slightest tendency to facetting. Facetting can not, therefore, be regarded as an unfailing characteristic of wind-polished pebbles. At White Rock, a few miles east of Boulder, Colo., beautifully polished quartz, quartzite and other pebbles lie by thousands on the wind-eroded surface of the Laramie and Fox Hills sandstones, but probably a day's search would not secure a single pebble showing the slightest suggestion of facetting. A few miles southwest of Villa Grove, in the same state, on a hill of Carboniferous limestone, perfectly polished pebbles are plentiful. No lapidary could do more perfect work, but facetting is not found. These are not gastroliths.

A very interesting discovery of polished pebbles was made by Mr. Philip Argall, of Denver, in the Santa Eulalia mining district, Chihuahua, Mexico. In one of the mines on Santa Eulalia Mountain, the shaft penetrating the massive Cretaceous limestone cuts a fissure leading to a chimney lined with low-grade ore. At the bottom of the chimney, at a depth of 1,200 feet below the surface, there is an elliptical cave-like opening thirty by fifteen feet. The bottom of the cave was plentifully strewn with perfectly polished flint pebbles which were cemented to the calcite-covered floor like plums. In other places the pebbles were found in pot-holes in the underground water courses. The history of these pebbles is believed to be as follows: The deposition of ores was followed by a period of solution during which the caves were formed, and the limestone in places rendered open and sponge-like by solution. The walls and floors of some of the openings were covered with calcite, deposited largely from standing water. Where calcite was not deposited, the solution of the limestone has left nodules of flint standing out from the walls of the caves. Similar nodules loosened from the limestone by solution and otherwise, have furnished the material for the polished pebbles of the caves and water-